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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/533,890

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Peter Persoone

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EXAMINER

BLACKWELL, GWENDOLYN ANNETTE

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/533,890	<b>Applicant(s)</b> PERSOONE ET AL.	
	<b>Examiner</b> Gwendolyn Blackwell	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 10 and 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/5/05;6/27/07;8/1/07</u> .                                   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Group I, claims 1-9, in the reply filed on November 9, 2007 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. The restriction is still deemed proper and is made FINAL.

### ***Examiner's Comment***

3. Claim 1 includes the limitation "...said layered structure laminated on glass having a having a visual light transmittance (VLT) higher than 70% and a solar heat gain coefficient (SHGC) lower than 0.44". The limitation can be interpreted two ways. The first way is that the glass can be interpreted as having those properties or the second way is that the layered structure on the glass substrate can have those properties. The specification provides for the layered structure on the glass substrate to have the claimed properties. To further prosecution, the claim will be interpreted in line with the specification. It is suggested to add a comma between "glass" and "having" to clarify that the properties are referring to the layered structure on the glass substrate and not the glass substrate alone.

### ***Claim Rejections - 35 USC § 101/112***

4. 35 U.S.C. 101 reads as follows:

*Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.*

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

*The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.*

6. Claim 9 provides for the use of the layered structure as a transparent heat-mirror, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 9 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

*(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

8. Claims 1-5 and 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent no. 4,996,105, Oyama et al.

*Regarding claims 1-3*

Oyama et al disclose a coated transparent substrate wherein the coating is comprised of a first transparent oxide layer formed on the substrate, a second Ag layer formed on the first oxide, a third transparent oxide layer formed on the Ag layer, a fourth Ag layer formed on the third oxide layer, and a fifth transparent oxide layer formed on the Ag layer, (column 3, lines 3-15). The transparent oxide layer can be  $\text{TiO}_2$  having a refractive index of 2.4, (column 4, lines 40-43). The transparent substrate glass can be sheet glass, (column 4, lines 8-17). It is preferred that the coated glass substrate has a visible transmittance of particularly at least 70%, (column 5, lines 56-65). As the coated substrate has a visible light transmittance of at least 70%, it would be expected that the coated substrate would exhibit the other optical and/or physical characteristics as claimed, absent an objective showing to the contrary, meeting the limitations of claims 1-3.

*Regarding claims 4-5 and 7-9*

Example 5 demonstrates that the transparent oxide is  $\text{TiO}_2$ , (column 7, lines 55-67). As the refractive index of the oxide is 2.4, (column 4, lines 40-43), it would be expected that the layer is mainly rutile, absent an objective showing to the contrary, meeting the limitations of claim 4.

An interlayer (intermediate layer) may be inserted between the interface between adjacent layers, (column 5, lines 33-38), meeting the limitations of claim 5.

Example 5 demonstrates that Ag layers have a thickness of about 100 angstroms (10 nm), meeting the limitations of claim 7.

Example 5, also demonstrates that the metal oxide layers have a thickness of about 350 angstroms (35 nm) and about 700 angstroms (70 nm), meeting the limitations of claim 8.

As the coated substrate meets Applicant's claimed layer structure and visible light transmittance, it would be expected that Oyama's coated substrate could function as a heat-mirror, absent a showing to the contrary. Especially in light of, the coated substrate reflecting 95% at a wavelength of 10 micrometers, meeting the limitation of claim 9.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

*(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.*

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent no. 4,996,105, Oyama et al as applied to claims 1 and 5 above, and further in view of United States Patent no. 5,419,969, Miyazaki et al.

Oyama et al disclose the limitations of claims 1 and 5 above. In addition, the interlayer (intermediate layer) can be added to improve the adhesion of the coating layers, (column 5, lines 33-38). Oyama et al does not specifically disclose the composition of the interlayer.

Miyazaki et al disclose a multilayered coating formed on a substrate wherein the coating is comprised of alternating layers of oxide films and Ag films, (column 2, lines 3-15). Sometimes Ag layers will exfoliate from the oxide film at the interface of the Ag and oxide films, (column 3, lines 31-40). In order to improve adhesion at the interface, an interstitial (intermediate) layer is formed of a material such as gold, (column 7, lines 45-59).

Oyama et al and Miyazaki et al disclose analogous inventions related to coated substrates comprised of alternating layers of oxides and Ag. It would have been obvious to one skilled in the art at the time of invention to modify the interlayer of Oyama et al with the gold based interstitial layer of Miyazaki et al in order to limit the exfoliation at the oxide/Ag interface by increasing the adhesion of the layers, (Miyazaki, column 7, lines 33-59), claim 6.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gwendolyn Blackwell whose telephone number is (571) 272-1533. The examiner can normally be reached on Monday - Thursday; 6:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1794

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gwendolyn Blackwell/

Primary Examiner, Art Unit 1794